ASG

Alert Systems Group

DELIVERING THE INDUSTRY’S FIRST DISASTER AND SAFETY AUTOMATIONS

About Us

- Only Disaster Automations company in existence with our extensive partnerships and capabilities

- Covering 98% of the US population with **Quadruple** redundancy

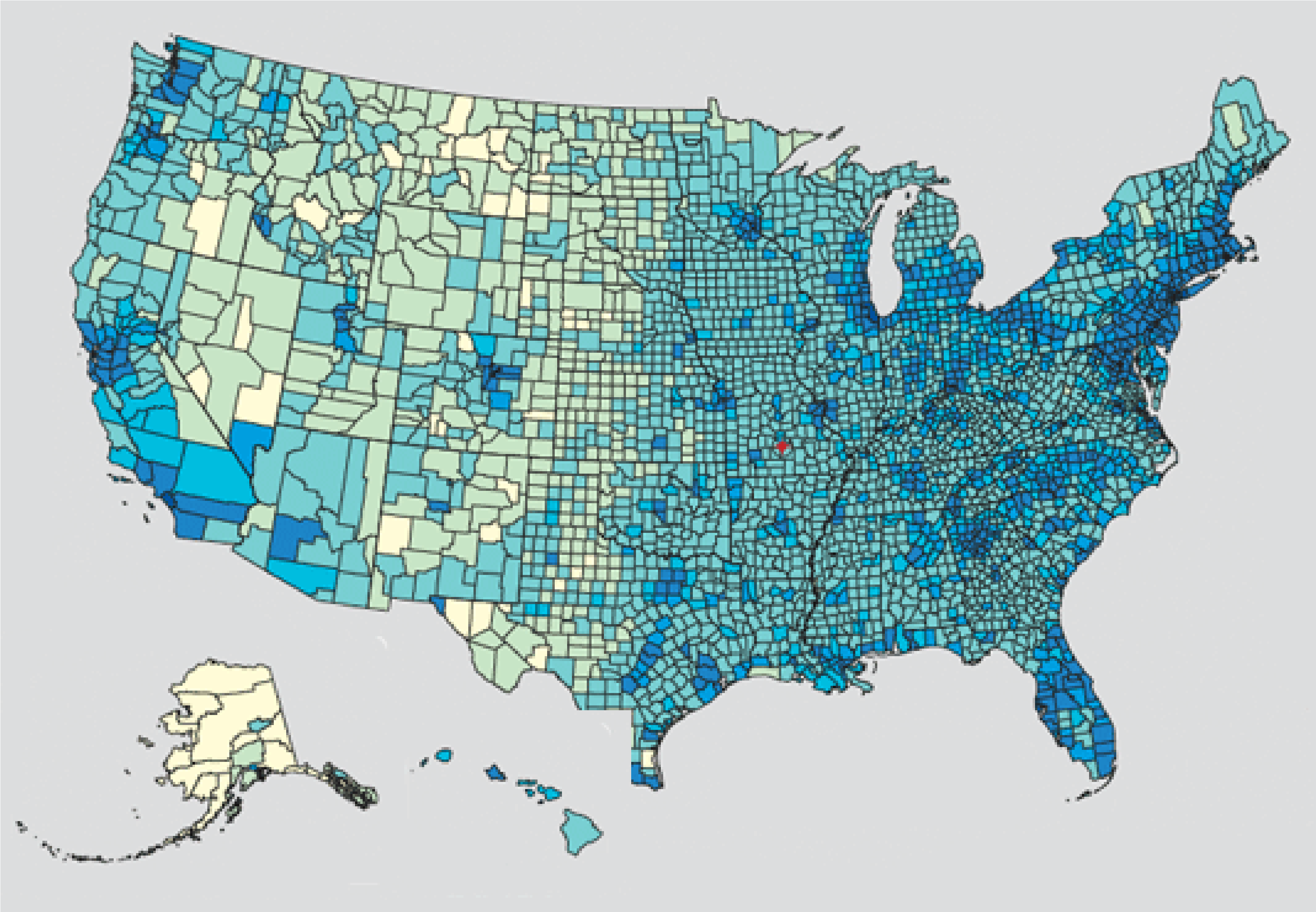
- Over 45 trained Communications professionals across the US specializing in Interoperability, 2-way radio systems, and Emergency Management
  - Additional 30 mechanical, electrical, and software engineers spread across the country

Are We Vulnerable?

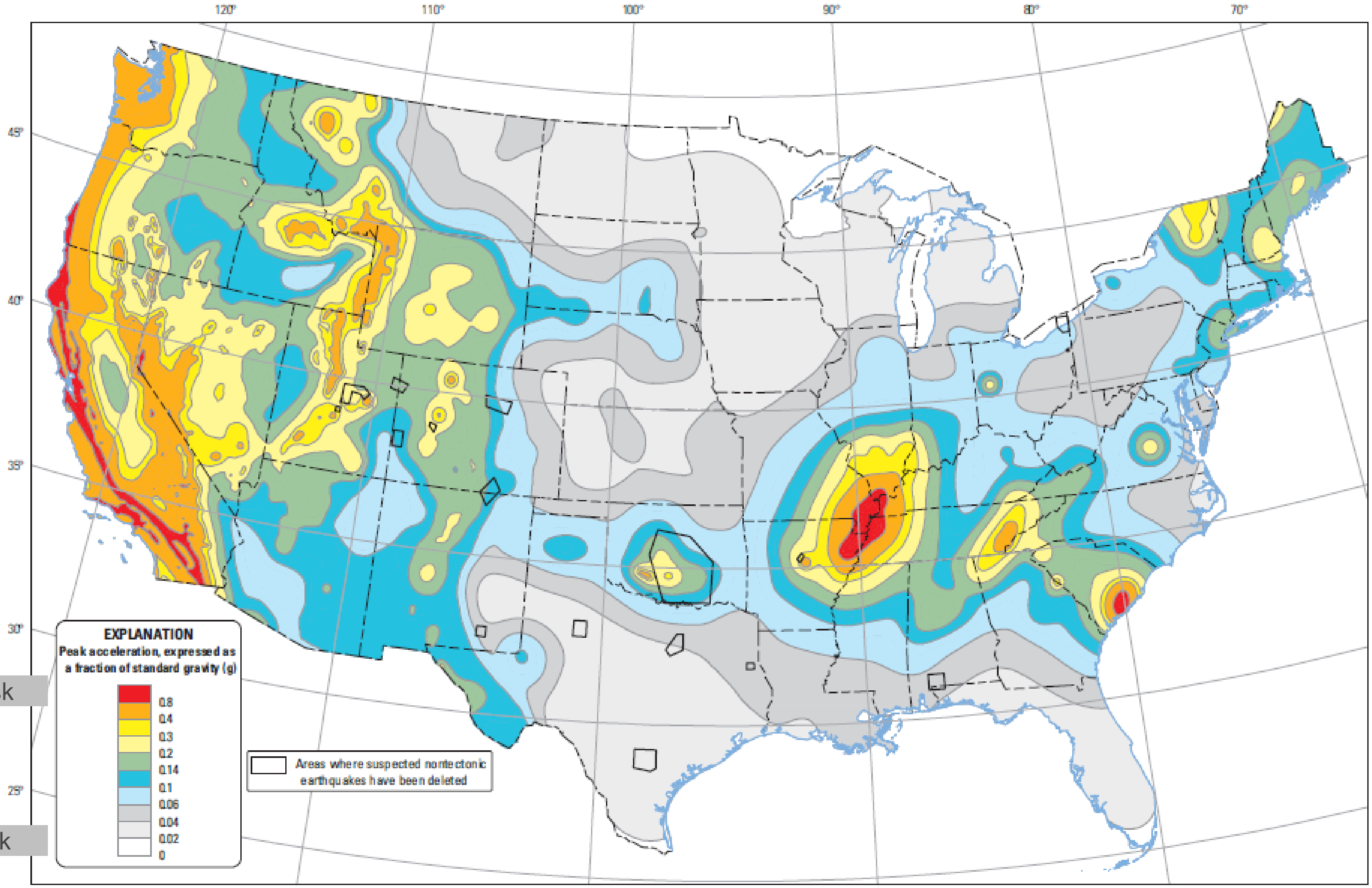
US Density

People per Square Mile by County

- 🟦 3,000.0 to 69,468.4
- 🟦 300.0 to 2,999.9
- 🟦 160.0 to 299.9
- 🟦 88.4 to 159.9
- 🟦 7.0 to 88.3
- 🟩 1.0 to 6.9
- 🟨 Less than 1.0



Earthquakes

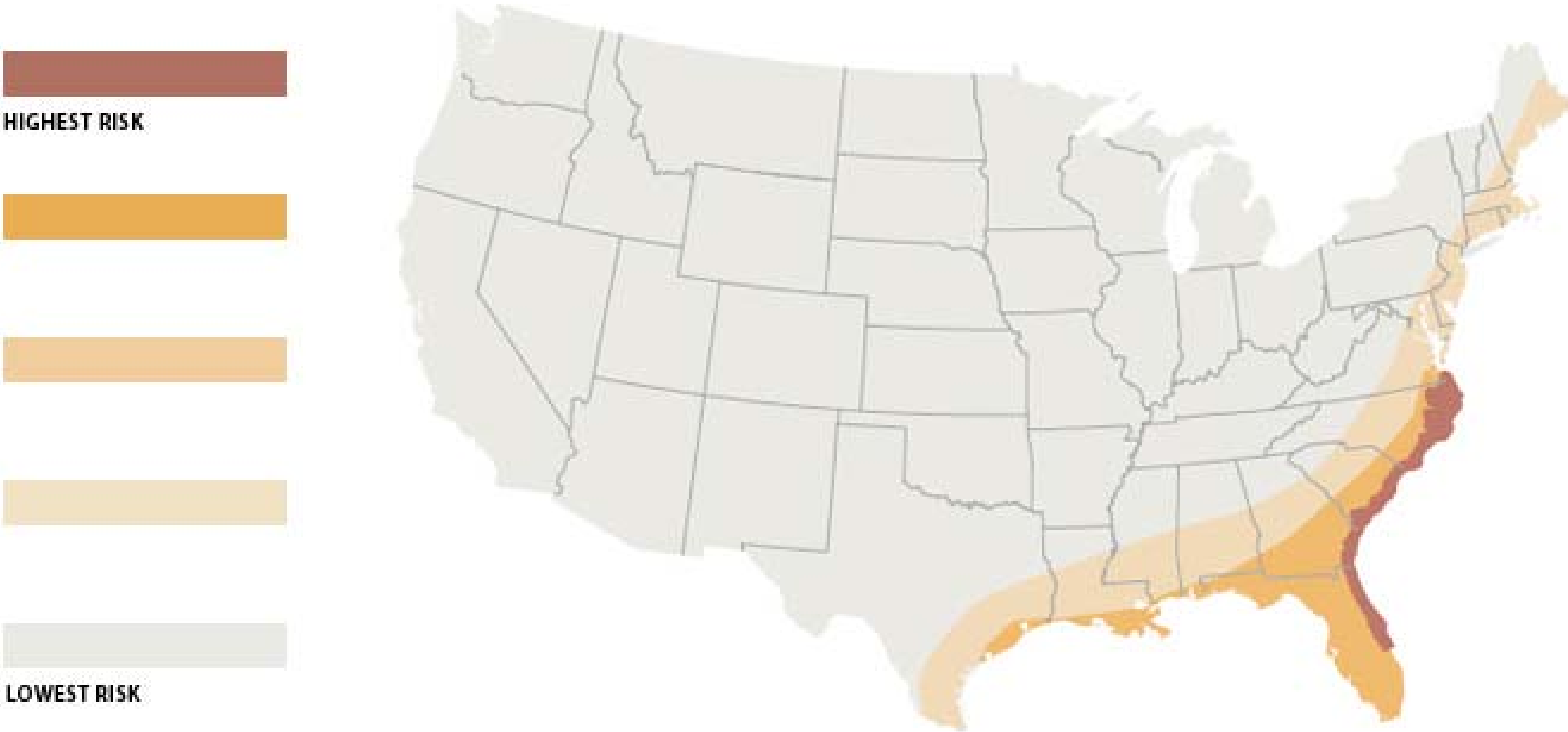

120°
110°
100°
90°
80°
70°
45°
40°
35°
30°
25°
EXPLANATION
Peak acceleration, expressed as a fraction of standard gravity (g)
0.8
0.4
0.3
0.2
0.14
0.1
0.06
0.04
0.02
0
Areas where suspected nontectonic earthquakes have been deleted

US Seismic Risk

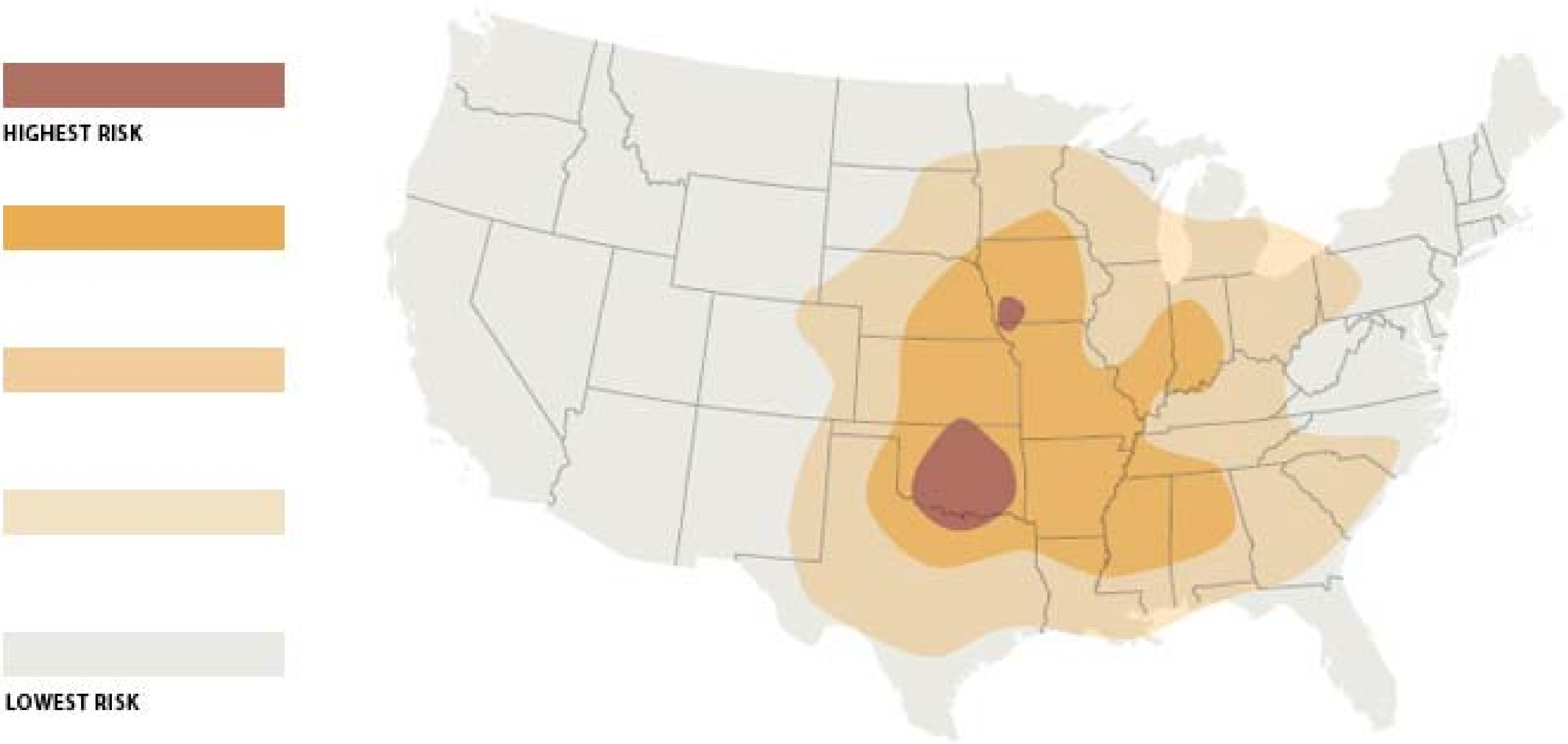
High Risk

Low Risk

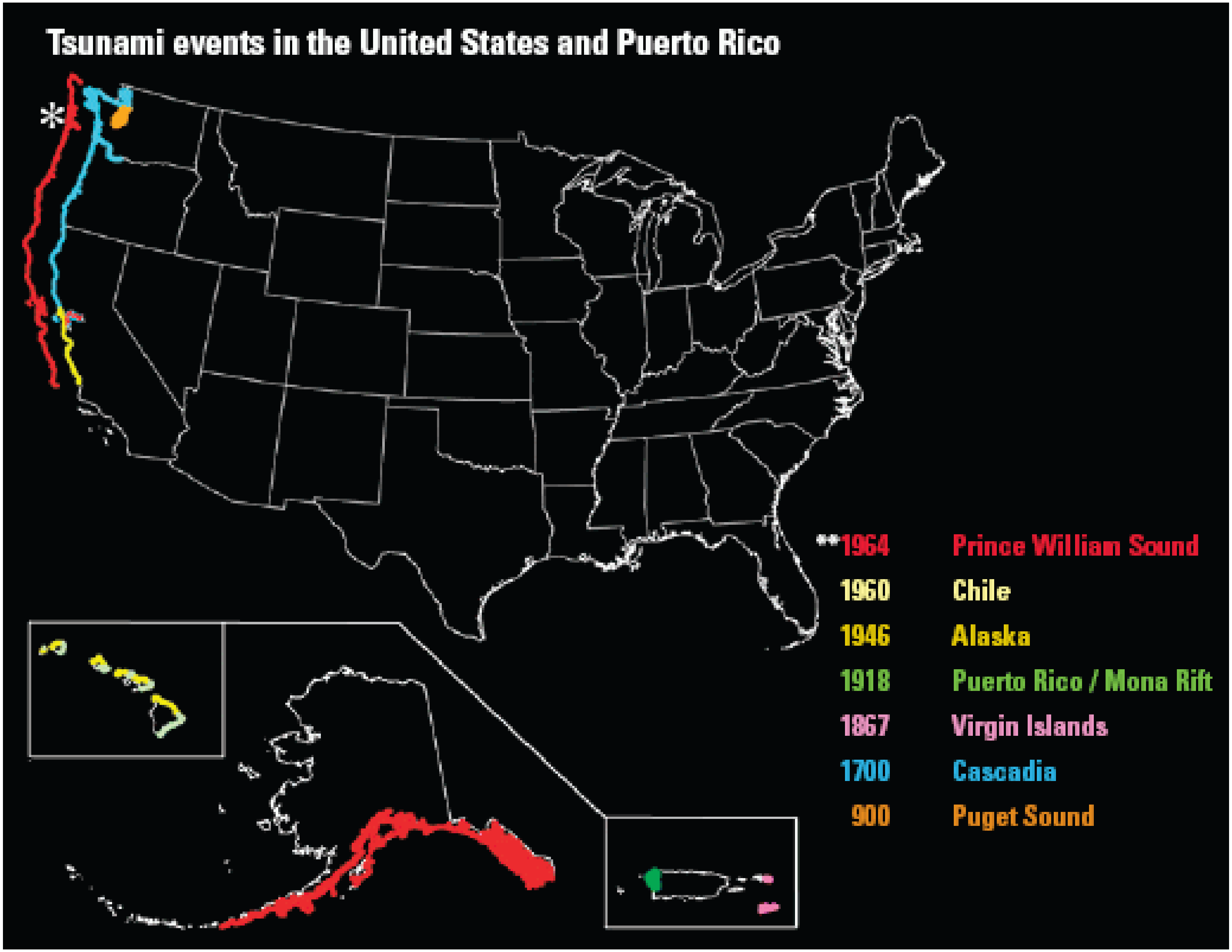
Hurricanes



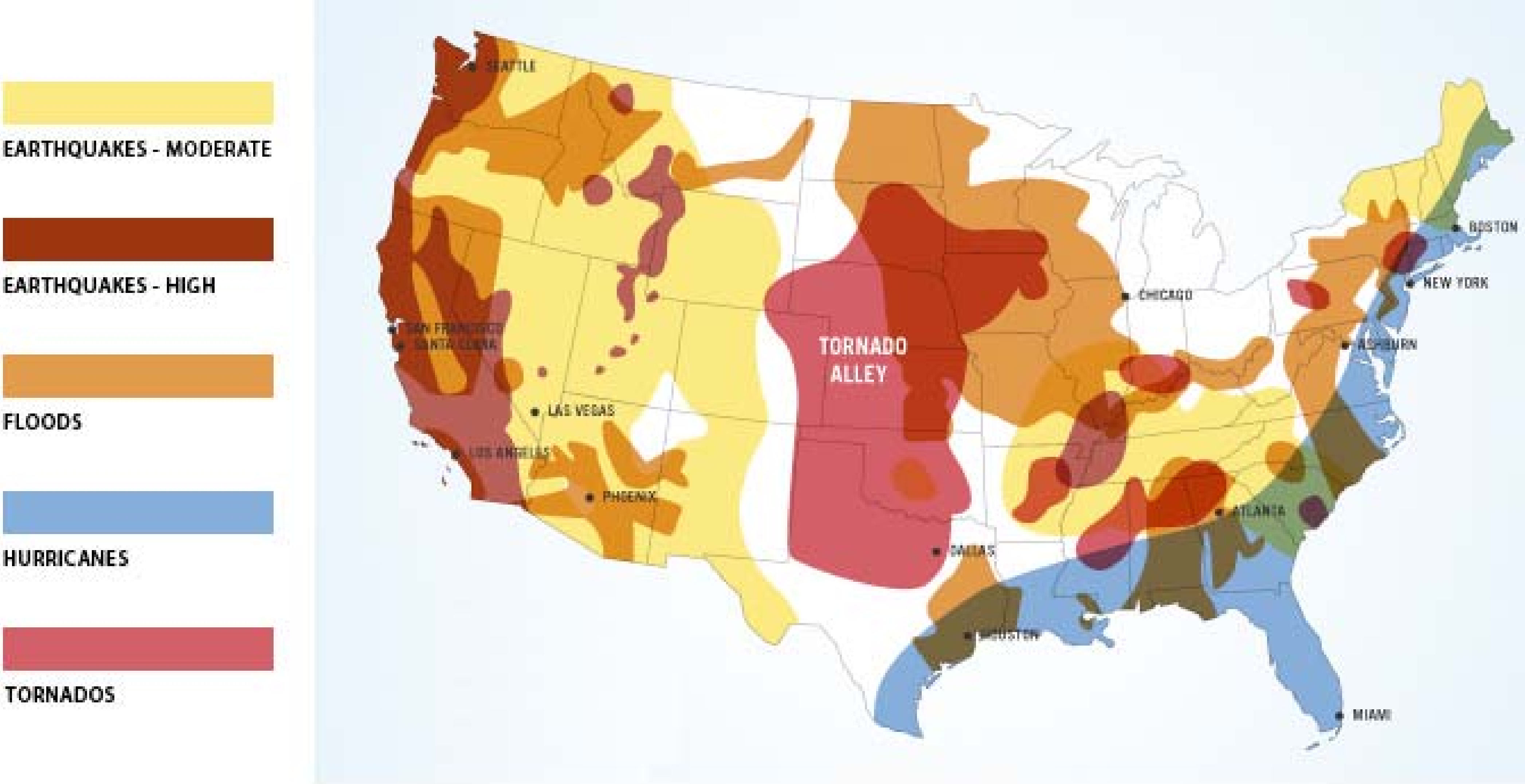
Tornados



Tsunamis


Tsunami events in the United States and Puerto Rico
*
**1964 Prince William Sound
1960 Chile
1946 Alaska
1918 Puerto Rico / Mona Rift
1867 Virgin Islands
1700 Cascadia
900 Puget Sound

All Natural Disasters



Lay of the Land

MOTOROLA

HARRIS®

KENWOOD
NEXEDGE™

Proprietary Radios

RAVEN
ELECTRONICS
CORPORATION

Interop

GLOBAL
SECURITY SYSTEMS

EAS

Other Noteables:
- LexRay (video management)
- Seismic Warning Systems (EQ)
- Everbridge (mass notification)

Why is Automation Important

1. Limited Time (Earthquakes, Tornadoes, Active Shooter, etc)
   - Seconds Save Lives, Minutes Save Thousands of Lives

2. Limited Resources (Volunteers, Dispatchers, Emergency Managers, Ambulances, Fire Trucks, Bandwidth on the cell towers)

3. Most often … It's Both

4. How many operational procedures is a single emergency manager responsible for in any disaster? What happens when that Emergency Manager is given 15 seconds to do everything?

What Happens During a Disaster

1. The disaster or event starts and can last for any duration of time

2. There is a period of time where the human element needs to grasp what has happened and process

3. Based on training, the human element needs to respond according to their training. If there is no training, then “Fight or Flight” typically kicks in

4. The trained human element needs to personally start a chain of events but has physical constraints such as distance, time, and number of events to initiate. Vulnerable to injury and human error of missing an operational procedure

Solution

The Internet of Things

1. Computers do not make mistakes when programmed correctly

2. Computers work faster than humans

3. Computers can multitask millions of times more efficiently than humans

Utilizing Existing Systems and Infrastructure

Automation of everything!

Bird's Eye View

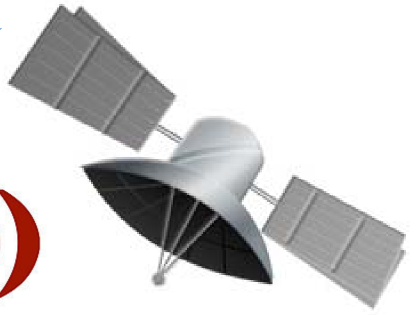
NOAA

USGS
science for a changing world

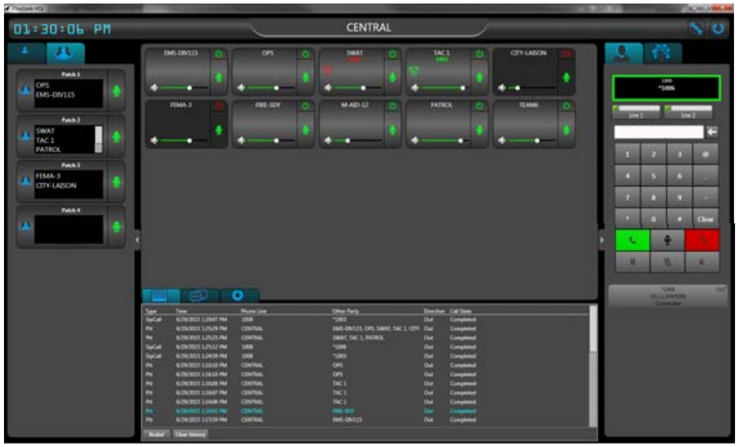
Raw Seismic and Weather Data

Any Input will Trigger the system

Alert Cloud Server Infrastructure (Decentralized)

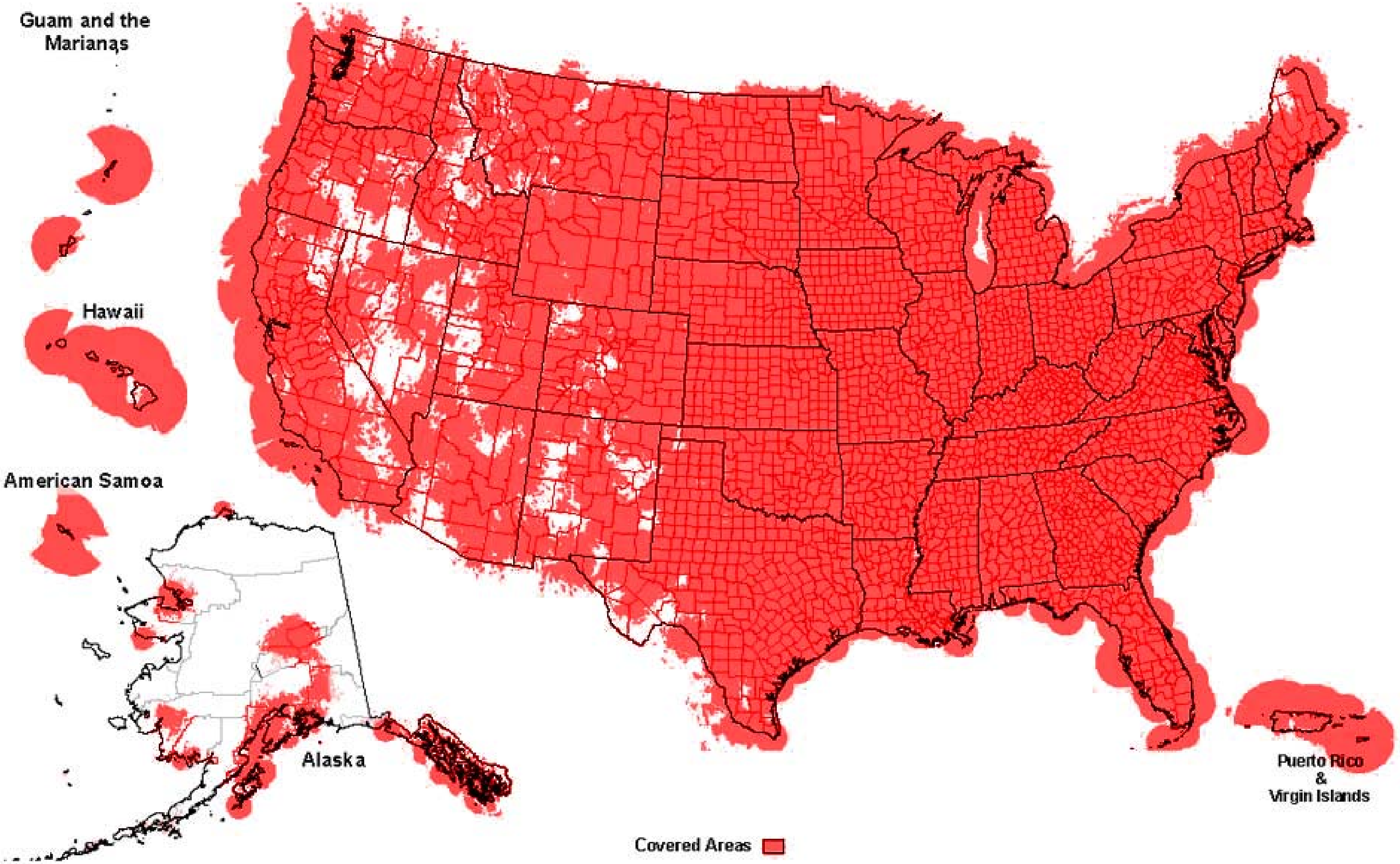


Cell LTE, Internet, EAS Broadcast, and Satellite



Automation + Interoperability

Example of Coverage Map – Utilizing Existing Resources



Automatic Natural Disaster Alerts Across All Communication Platforms

Any Radio Manufacturer

MOTOTRBO™ Connect Plus - IP Console
Trident Micro Systems ADCC and Avtec Scout

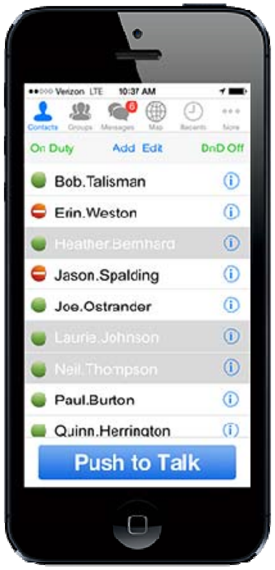
Direct Interface into any EOC Dispatch system currently used:

- Motorola
- Zetron
- Telex
- Avtec

Any POTS phone systems

Sprint PTT & Direct-Connect

Cell-to-radio PTT apps



Any VOIP phone system

Automate Response on any Mechanical Interface

- *Doors, Windows, Gates*
- *Lights, Alarms, Sirens*
- *Back-up Generators*
- *Automatic Shut-offs*
    - *Valuable Machinery*
    - *Gas lines*
    - *Vulnerable water mains*
    - *Refineries*
    - *Reactors*
- *Stop elevators at the closest floor*
- *Slow and stop trains*
- *Slow and stop rides at predetermined locations*

Automatically Alert and Automate Any Existing Mass Notification System

Sirens
Alarms
PA Systems

Federal Signal
Everbridge
CodeRed
CodeBlue
Adhoc
Coopers

Fire Station Alerting:
Westnet
Zetron
All Others

Need Logic

Would we react the same way for a Magnitude 2.5 as we would for a Magnitude 8.0?

Would we react in the same way for an earthquake as we would for a tsunami, or a flash flood … or an Active Shooter?

Do I need to react if I am in San Francisco and Los Angeles experiences an 8.0?

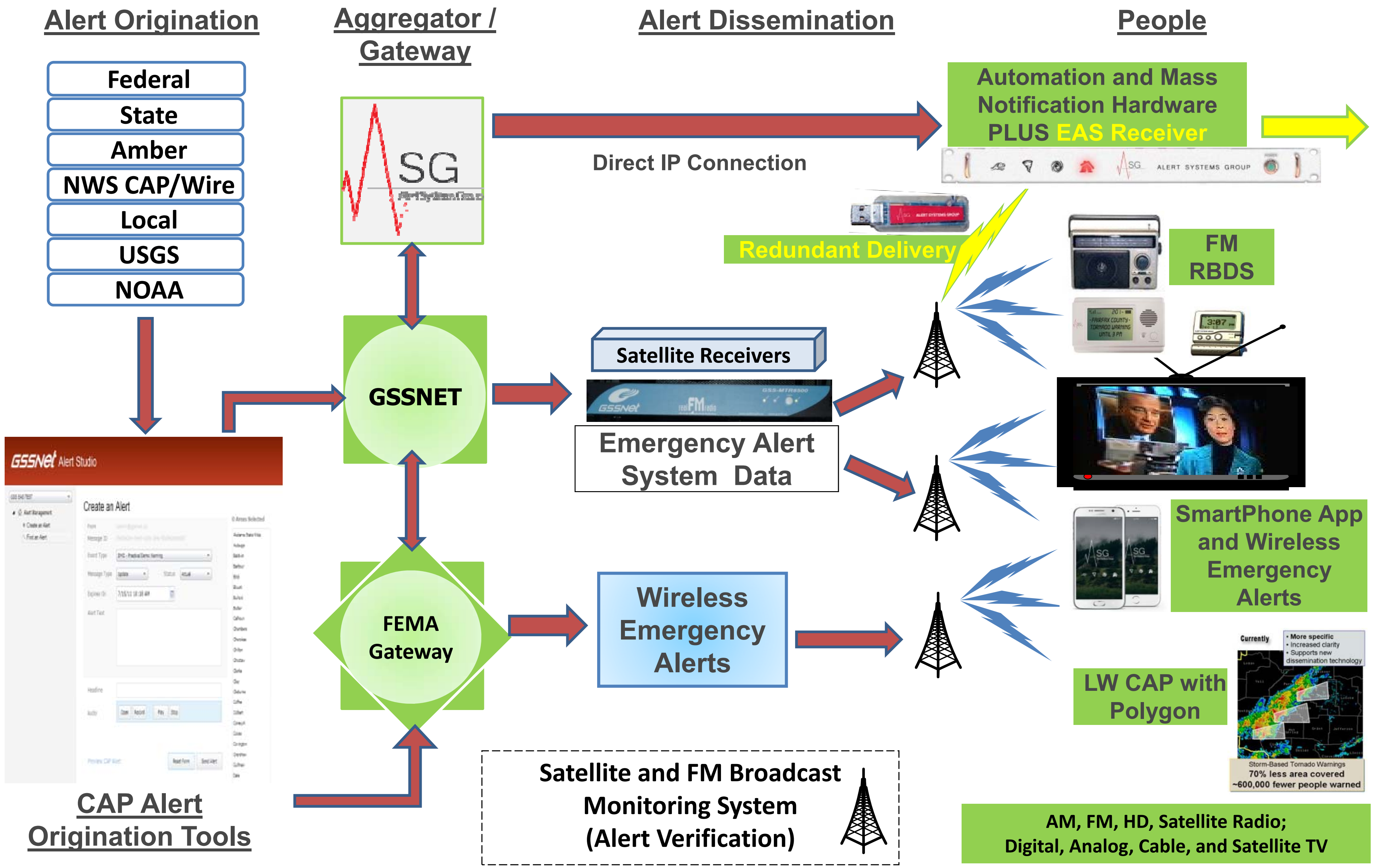
Need Logic

Customized alerts based on your location, not the epicenter

Up to 500 Simultaneous events within a single box

Up to 250 layers of “If-Then” statements for each event

Rapid Alert System Architecture



Alert Origination

- Federal
- State
- Amber
- NWS CAP/Wire
- Local
- USGS
- NOAA

CAP Alert Origination Tools

Aggregator / Gateway

GSSNET

FEMA Gateway

Alert Dissemination

Direct IP Connection

Redundant Delivery

Satellite Receivers

Emergency Alert System Data

Wireless Emergency Alerts

Satellite and FM Broadcast Monitoring System (Alert Verification)

People

Automation and Mass Notification Hardware PLUS EAS Receiver

FM RBDS

SmartPhone App and Wireless Emergency Alerts

LW CAP with Polygon

Currently
• More specific
• Increased clarity
• Supports new dissemination technology
Storm-Based Tornado Warnings
70% less area covered
~600,000 fewer people warned

AM, FM, HD, Satellite Radio; Digital, Analog, Cable, and Satellite TV

Automation and Mass Notification Hardware

Powered by AlertFM USB Reciever

1. Control and PTT any Radio Manufacturer
2. Any POTS phone system
3. Any VOIP phone system
4. Sprint PTT & Direct Connect
5. Direct Interface into any EOC Dispatch system currently used:
    - Motorola
    - Zetron
    - Telex
    - Avtec

1. Doors, Windows, Gates
2. Lights, Alarms, Sirens
3. Back-up Generators
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5. Valuable Machinery
6. Gas lines
7. Vulnerable water mains
8. Refineries
9. Reactors
10. Stop elevators at the closest floor
11. Slow and stop trains
12. Slow and stop rides at predetermined locations
13. **ANY MECHANICAL INTERFACE!!**

Transparency

Solutions that work with any new or existing systems

- Communications Systems
- Alerting Systems
- Automation of everything

**ALL DONE WITHIN SECONDS FROM WHEN
A DISASTER IS DETECTED!!**

Final Thought

It is not recommended to buy technology, but buy technology that fits your plan.

- Operational Plan
- Communications Plan
- Frequency plan
- Disaster Plan
- Emergency Plan
- Crisis Plan

Purposefully created to be frequency agnostic, radio agnostic, and device agnostic hardware customizeable to work around any plan you choose!

SG

Alert Systems Group